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JL

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: J.L. Sullivan et al. Attorney Docket No.: PHYS116829  
Application No.: 09/760,212 Group Art Unit: 3762  
Filed: January 12, 2001 Examiner: --  
Title: CIRCUIT FOR PERFORMING EXTERNAL PACING AND BIPHASIC  
DEFIBRILLATION

AMENDMENT TRANSMITTAL LETTER

Seattle, Washington 98101

November 2, 2001

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TO THE COMMISSIONER FOR PATENTS:

A. Amendment Transmittal

Transmitted herewith is an amendment in the above-identified application.

1. No additional claim fee is required, as shown below.  
X 2. The claim fee has been calculated as shown below.

COMPUTATION OF FEE FOR CLAIMS AS AMENDED

	Claims Remaining After Amendment		Highest Number Previously Paid For		Present Extra		Rate		Additional Fee
Total Claims	34	-	20	=	14	x	18	=	252
Independent Claims	4	-	3	=	1	x	84	=	84
TOTAL									\$336

B. Fees Enclosed

Enclosed is our Check No. 133232 in the amount of \$336.00 to cover the amendment claim fee.

C. Additional Fee Charges or Credit for Overpayment

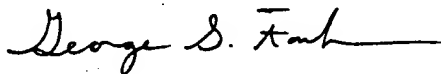
The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§ 1.16, 1.17 and 1.18 which may be required during the entire pendency of the application, or credit any

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overpayment, to Deposit Account No. 03-1740. This authorization also hereby includes a request for any extensions of time of the appropriate length required upon the filing of any reply during the entire prosecution of this application. A copy of this document is enclosed.

Respectfully submitted,

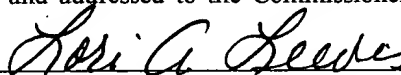
CHRISTENSEN O'CONNOR  
JOHNSON KINDNESS<sup>PLLC</sup>



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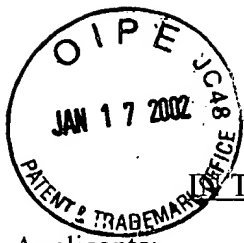
I hereby certify that this correspondence is being deposited with the U.S. Postal Service in a sealed envelope as first class mail with postage thereon fully prepaid and addressed to the Commissioner for Patents, Washington, D.C. 20231, on the below date.

Date: NOV. 2, 2001



GSF:lal

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THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: J.L. Sullivan et al.

Attorney Docket No.: PHYS116829

Application No.: 09/760,212

Filed: January 12, 2001

Title: CIRCUIT FOR PERFORMING EXTERNAL PACING AND BIPHASIC  
DEFIBRILLATION

SUPPLEMENTAL PRELIMINARY AMENDMENT

Seattle, Washington 98101

November 2, 2001

TO THE COMMISSIONER FOR PATENTS:

Please amend the above-identified application as follows:

In the Abstract:

Please delete the current abstract and substitute the below abstract therefor:

An external defibrillator/pacer (8) includes an output circuit (14) with four legs arrayed to form an H-bridge coupled to an energy storage capacitor. The energy storage capacitor delivers an external defibrillation pulse with stored energy during a defibrillation mode and an external pacing pulse during a pacing mode. Each leg of the output circuit contains a switch (SW1-SW4). In a defibrillation mode, pairs of switches in the H-bridge are selectively switched to generate a biphasic defibrillation pulse. Three switches (SW1, SW3, SW4) are silicon controlled rectifiers (SCRs). Gate drive circuits (51, 53, 54) are coupled to the SCRs to bias the SCRs with a voltage that allows the SCRs in response to control signals. One switch (SW2) includes an insulated gate bipolar transistor (IGBT). A gate drive circuit (52) is coupled to the gate of the IGBTs to provide a slow turn-on and a fast turn-off of the IGBT. In a pacing mode, a bypass circuit or current source circuit is used to provide a current path bypassing an SCR switch (SW3), which cannot be triggered by the relatively low current of pacing pulses. One of the SCRs (SW4) may

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02 FC:103

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252.00 OP

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